

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-018092**Date Inspected:** 04-Nov-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1900**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Xu Le Feng**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** TOWER & OBG Components**Summary of Items Observed:**

On this date Caltrans Office of Structural Materials Quality Assurance Inspector, Sandeep Kumar (QA) was present during the times noted above for observations relative to the work being performed.

TOWER JETTY

This QA Inspector observed the following work in progress

Shielded Metal Arc Welding (SMAW):

Weld joint # 19 located on North tower Lift-4 Skin 'E', 119 M Backfill plate NSD1 – FESA4 – 3B/F. Welder is identified as 040582. ZPMC Quality Control (QC) Inspector is identified Chen Tan. The welding variables recorded by QC appeared to comply with the WPS – B – P – 3313 – Tc – P4.

Weld joint # 16 located on South tower Lift-4 Skin 'E', 119 M Backfill plate SSD1 – FESA4 – 1B/F. Welder is identified as 040581. ZPMC Quality Control (QC) Inspector is identified Chen Tan. The welding variables recorded by QC appeared to comply with the WPS – B – P – 3212 – B – U2a – 2.

Weld joint # 28 located on West tower Lift-4 Skin 'A', 119 M Backfill plate WSD1 – FASA4 – 2B/E. Welder is identified as 040690. ZPMC Quality Control (QC) Inspector is identified Chen Tan. The welding variables recorded by QC appeared to comply with the WPS – B – P – 3313 – Tc – P4.

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Weld joint # 28 located on East tower Lift-4 Skin 'A', 119 M Backfill plate ESD1 – FASA4 – 2B/E. Welder is identified as 046769. ZPMC Quality Control (QC) Inspector is identified Chen Tan. The welding variables recorded by QC appeared to comply with the WPS – B – P – 3313 – Tc – P4.

BAY#10

ORTHOTROPIC BOX GIRDER (OBG) AT BAY#10

This QA Inspector observed the following work in progress

Fluxcored Arc Welding (FCAW):

Weld joint # 016 located on Bike Path, BK004A2 – 027. Welder is identified as 040302. ZPMC Quality Control (QC) Inspector is identified as Yu Zhi Lai. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2231 – B – L1b – F.

Weld joint # 015 located on Bike Path, BK004A6 – 030. Welder is identified as 040533. ZPMC Quality Control (QC) Inspector is identified as Yu Zhi Lai. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2133.

Weld joint # 043 located on Bike Path, BK004A1 – 030. Welder is identified as 053869. ZPMC Quality Control (QC) Inspector is identified as Yu Zhi Lai. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2232 – Tc – U4c – F.

BAY#11

The following Non Destructive Testing (NDT) inspection carried out as per the ZPMC submitted Notification No. 007226

Visual Inspection Testing (VT)

This QA inspector performed VT of the area previously tested and accepted by ZPMC Quality Control personnel. The member is identified as TOWER Component. The identified component and location designations reviewed are as follows:

EAST TOWER LIFT-3, REPAIR AREAS AFTER BLASTING AND PAINTING (EXTERNAL)

SKIN 'D' 83 M ELEVATION – MT REPAIR

SKIN 'D' 83 M ELEVATION – FLAME CUT

EAST TOWER LIFT-3, REPAIR AREAS AFTER BLASTING AND PAINTING (INTERNAL)

SKIN 'D' 99 M DIAPHRAGM (LOWER SIDE) – POROSITY

SKIN 'D' 99 M DIAPHRAGM (UPPER SIDE) - POROSITY

SKIN 'D' 109 M 2nd STIFFENER FROM SKIN 'C' - POROSITY

SKIN 'D' 109 M 2nd STIFFENER FROM SKIN 'C' - POROSITY

SKIN 'D' 109 M CENTRE OF DIAPHRAGM - POROSITY

SKIN 'B' 109 M –ROD STUCKED IN THE WELD RELIEF HOLE

SKIN 'C' 109 M –BOLT STUCKED IN THE WELD RELIEF HOLE

Magnetic Particle Testing (MT)

This QA inspector performed MT of the area previously tested and accepted by ZPMC Quality Control personnel.

This QA Inspector generated an MT report for this date. The member is identified as TOWER Component. The

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component and location designations reviewed as follows:

EAST TOWER LIFT-3, REPAIR AREAS AFTER BLASTING AND PAINTING (EXTERNAL)

SKIN 'D' 83 M ELEVATION – MT REPAIR

SKIN 'D' 83 M ELEVATION – FLAME CUT

EAST TOWER LIFT-3, REPAIR AREAS AFTER BLASTING AND PAINTING (INTERNAL)

SKIN 'D' 99 M DIAPHRAGM (LOWER SIDE) – POROSITY

SKIN 'D' 99 M DIAPHRAGM (UPPER SIDE) - POROSITY

SKIN 'D' 109 M 2nd STIFFENER FROM SKIN 'C' - POROSITY

SKIN 'D' 109 M 2nd STIFFENER FROM SKIN 'C' - POROSITY

SKIN 'D' 109 M CENTRE OF DIAPHRAGM - POROSITY

This QA Inspector observed the following work in progress

Shielded Metal Arc Welding (SMAW):

Weld joint # 19B located on Lift-5 bracket ND1 – BRSA5 – 2. Welder is identified as 040724. ZPMC Quality Control (QC) Inspector is identified as Li Bin. The welding variables recorded by QC appeared to comply with the WPS – B – T – 3213 – TC – U5b.

ORTHOTROPIC BOX GIRDER (OBG) AT BAY#11

This QA Inspector observed the following work in progress

Fluxcored Arc Welding (FCAW):

Repair welding of weld joint # 043 located on Bike Path, BK005A1 – 003. Welder is identified as 044541.

ZPMC Quality Control (QC) Inspector is identified as Zhao Mao Mao. The welding variables recorded by QC appeared to comply with the WPS – 345 – SMAW – 2G (2F) - Repair.

Weld joint # 018 located on Bike Path, BK005A2 – 003. Welder is identified as 205649. ZPMC Quality Control (QC) Inspector is identified as Shang Hai Lang. The welding variables recorded by QC appeared to comply with the WPS – B – T – 2231 – B – L1b – F – 1.

This QA Inspector observed the following work not in compliance:

Description of Incident:

During the Caltrans Quality Assurance (QA) in-process observation on East tower lift-5 grillage, this QA Inspector discovered the following issue:

- ZPMC offered NWIT #007231 for Visual Testing (VT) and Magnetic Particle Testing (MT) of a repair to an area of backing bar non-fusion.

- The weld designation is ESD1-TL5-2B/F#23.

- ZPMC personnel removed the portion of the backing bar, but did not perform back welding necessary to comply with AWS D1.5 2002.

- This issue was previously raised on 27-Oct-2010 (NCR# ZPMC-0839).

- Weld is a T-Joint Complete Joint Penetration (CJP) weld.

- The component located at fabrication Bay#11.

To close the Non-Conformance Report, NCR#ZPMC-0839, ZPMC had submitted the Notice of Witness Inspection Number (NWIT) # 007231. This repaired area has been previously tested and accepted by ZPMC Quality Control (QC) personnel. ZPMC's QC personnel performed 100% VT and MT inspection of this area.

Applicable reference:

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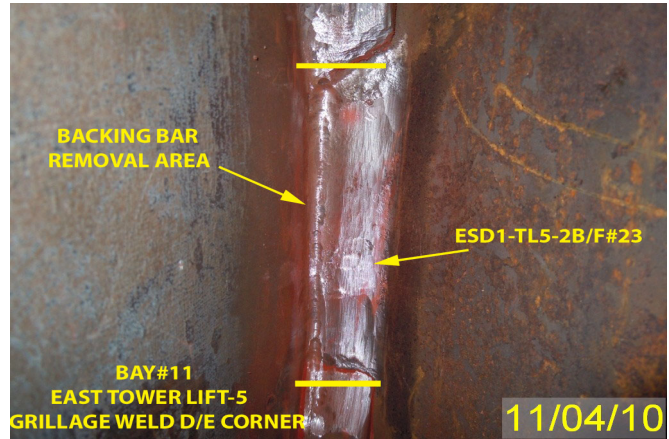
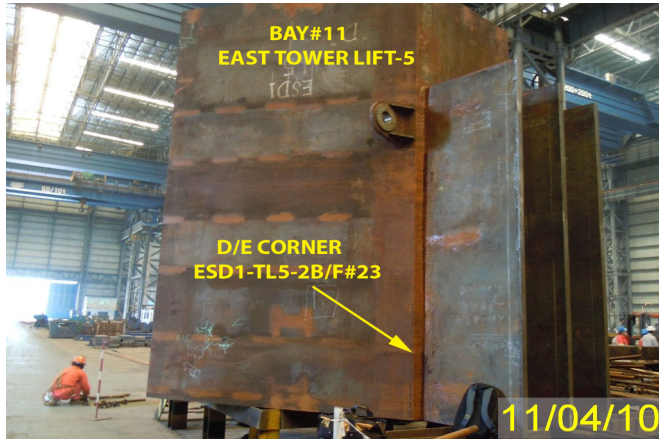
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AWS D1.5 2002, Section 3.13.2: "Groove welds made with the use of steel backing shall have the weld metal thoroughly fused with the backing."

AWS D1.5 2002, Section 4.6.9: "CJP groove welds made without the use of steel backing shall have the root gouged to sound metal before welding is started from the second side."

For further information see below pictures:-

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.



Summary of Conversations:

No Relevant Conversations.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Thomas Ho- 15002048250, who represents the Office of Structural Materials for your project.

Inspected By: Kumar,Sandeep

Quality Assurance Inspector

Reviewed By: Clifford,William

QA Reviewer